The Vermont Farmer.

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Communications for the Agricultural Department should be addressed to the Agricultural Editor at Springfield, Vt.

The Rural New Yorker maintains that clover seed is not an exhausting crop.

D. S. Pratt and Winslow Brothers have sold the Short-Horn bull 19th Duke of Airdrie to Emory Cobb, Kankakee, Ill.

A. & E. Whitman, Fitchburg, Mass., have sold their herd of Short-Horns, 33 head, to Ayres & McClintock of Millersburg, Ky.

Eighty bushel (6,210,000) salmon eggs were shipped east from the United States fish hatching establishment on the McCloud river, California, the past year.

Mr Willard says good milk contains about five per cent of milk sugar, whey four and one half per cent. It is estiamted that thirty factories of four hundred cows each, would yield two million pounds.

A farmer in Ingham county, N. Y., raised a premium patch of potatoes, on two square rods of drained swamp land, which yielded at the rate of 480 bushels per acre. It is not stated if it was usual field culture, which makes a difference.

Col Waring says that small sewers and drains are better than large ones where the usual flow of water is small, for the reason that the usual current will be sufficient to carry before it all ordinary obstructions, and will keep itself clean.

Dr Loring would not recommend an indiscriminate application of thorough drainage to all soils. Heavy clay soils are a bane to the farmer without it. Cold, springy land, land which holds water percolating from the hill-sides, is made highly valuable by drainage.

The Gardener's Monthly states that a remedy has been discovered for the pest of vineyards, phylloxera. It is the combined employment of sulpho-carbonate of potash which kills the insect at any depth of soil and of potassic, ammoniacal and sulphurated manures.

Fruit and vegetables have not sold so low in New York and other markets for 25 years, being about half the average price for previous years; but the market gardeners hope for a revival of prices next year. We think they will be disappointed in the expectation that prices will regain their former position. If they wish to make a living they must cut down the cost of production.

Mr Ives of Batavia, N. Y., found at the rate of nearly nine tons to the acre of top and root of quack or witch grass. The great mass of the roots lie within two to four inches of the surface. His practice is to turn them under six or seven inches and smother them with four inches of clean soil, and they make a valuable fertilizer when decayed.

Deacon Buffum of Winchester, N. H., a member of the New Hampshire board of agriculture and a very successful breeder of cattle, states as his opinion that the value of the cattle of New Hampshire and Vermont may be doubled in five years by a better system of breeding, without increasing the number, or largely increasing the cost of keeping.

The board of agriculture of our sister state is composed of the following members:

Moses Humphry, Concord, chairman. J. M. Weare (Rockingham county); W. H. H. Mason, Moultonboro; S. W. Buffum, Winchester; Charles F. Kingsbury, Lyme; J. W. Sanborn, Lower Gilmanton; Edmund Burke, Newport; B. F. Hutchinson, Concord, and H. F. Holton, Lancaster. There is a vacancy for Strafford county.

Prof E. J. Wickson, the able agricultural editor of the Utica Herald, and president of the Utica dairymen's board of trade, well-known in Vermont from his addresses at the dairymen's association, has accepted a position on the Pacific Rural Press. By the removal of Prof Wickson to California, the East loses one of her most useful and promising young men. We predict for him a career of usefulness and honor in the state of brilliant achievements in agriculture as in everything else, and we heartily wish him success.

Our enterprising cotemporary at the state capitol, which furnishes agricultural as well as political and social intelligence to the unterrified, regardless of expense, scorns to use the reports of the meetings of the board of agriculture furnished to the press, but prefers to have them at first hands out of its own unbounded enterprise, which is highly commendable and liberal. Having informed its readers of this lofty purpose, it reposes on its good intentions, which have not proved very costly thus far.

Large or Small Cows.

The advocates of Jerseys and Ayrshires claim that those breeds of cows are more profitable on account of the smaller quantity of food required to keep them; and base their computations on the supposition that a cow consumes three per cent of her weight in hay per day. Hence, if a Jersey or an Ayrshire weighing 800 pounds and assumed to live on 24 pounds of hay per day makes as much butter as a Shorthorn of 1,200 pounds which is assumed to require 36 pounds of hay per day, the smaller breed is more profitable. We have never been satisfied of the accuracy of this three per cent rule. And have never seen reports of experiments which called for a change of opinion on the subject. We hold our opinion on this as on all other agricultural questions, subject to modification upon proper occasion, and will abandon pet theories and favorite stock upon conviction that something better is in the market.

The question is one of really great moment to farmers, and calls for their careful consideration. They are bound to search for truth and not for data to bolster up their own notions.

The Vermont Watchman in a recent issue discusses the subject and in a calculation based on the three-per-cent rule, estimates that in seven years the difference between two herds of fourteen each, one herd averaging 600 pounds live weight, the other 800 pounds, would amount to 47 tons of hay in seven years. Offsetting the supposed larger consumption in summer against the larger quantity of manure, and calling the hay $10 per ton, the larger animals must be sold at $33.57 each more than the smaller ones at the end of the seven years to bring the account out even.

The New England Farmer makes extracts from the Watchman and comments thereon, from which we make the following extracts:

We shall not attempt to decide this question, but only mention a few ideas that have been suggested by reading the above quotations from the doctor's problem. And first, is it a fact that different breeds do consume the same per cent of food on their live weight? How many carefully conducted experiments have been made with different breeds of cows, or with different cows of the same breed, which prove that all cows or all breeds of cows consume three pounds of good hay or its equivalent for each hundred pounds of live weight? We have no statistics at hand which will throw much light upon this subject, but we are inclined to believe that the per cent of food eaten by different cows, and by different breeds of cows, will vary considerably in many cases from the standard adopted in this calculation.

Cows, like human beings, seem to vary very much in their ability to digest and assimilate the food they consume. The same remark, also, holds good with horses. Who has not seen two horses performing an equal amount of work, the one requiring a considerably larger per cent of food on its live weight to keep up present condition than the other? Before spending a great deal of mental effort in the discussion of this question, we shall wish to be assured that the premises are correct.

It is often claimed by farmers who dislike the large Asiatic breeds of fowls, that these large, awkward birds eat twice as much as the smaller barn-yard fowls, and, while they are growing, this is undoubtedly near the truth. It must take more food to make eight pounds of flesh and bones than to make four pounds, and yet we think we can see how the small breeds may require more food in proportion to their size than the larger ones as when the small ones are full of life and activity, ready to run, fly, scratch, crow or fight at any moment, while the quiet Asiatics just eat and sleep, or lie around doing nothing all the day long.

The Shorthorn cattle have been bred for years principally for their beef, and they have been so handled that they have acquired a very quiet temperament. They waste very little food by mental or bodily excitement, while animals of some other breeds may be worrying or fighting away a considerable portion of the food material they consume. We have believed that this difference in temperament had much to do with the cost of keeping a hundred pounds of living flesh, whether it is carried by a horse, cow, hog, hen or a human being.

We do not deny the statement that three per cent of food, upon their live weight, is required for average animals, but we are in doubt as to whether sufficient experiments have been made upon different breeds, to establish the assertion. We know that the Shorthorns are accused by those who dislike them of being enormous eaters, and that the enemies of the Jerseys complain of them that they are dainty, and do not eat near as heartily as cattle should to be hardy and healthy. For our own part, we rather admire pretty good sized cattle, and we like to see them put down the hay when eating it as if it tasted good, for when we are feeding such animals we have reason to expect a liberal return for the food consumed, either in milk or flesh; but as butter making is a specialty with us, we shall be glad to exchange our present stock for smaller animals, if it can be proved that the gain on the food consumed will be anywhere near equal the amount figured out by our friend Hoskins, for here in Massachusetts the average value of a ton of hay is not ten, but more than twenty dollars, and consequently the real loss must be nearer seventy dollars than thirty-three, on each animal fed. If any of our readers can throw light on this important subject, we shall be glad to publish their communications in the Farmer.

Plan of Meeting of the State Board of Agriculture.

It has been found expedient to change the dates of some of the meetings of the board to accommodate parties living in the towns where they are to be held. The following is the corrected list:

Barre, Tuesday and Wednesday, Dec. 28 and 29.
Cabot, Thursday and Friday, Dec. 30 and 31.
Irasburgh, Tuesday and Wednesday, Jan. 11 and 12.
Franklin, Thursday and Friday, Jan. 13 and 14.
Brandon, Monday and Tuesday, January 17 and 18.
Orwell, Tuesday and Wednesday, Jan. 25 and 26.
Fayetteville, Tuesday and Wednesday, Feb. 1 and 2.
Pomfret, Thursday and Friday, Feb 3 and 4.
Rochester, Tuesday and Wednesday, Feb. 8 and 9.
Chelsea, Thursday and Friday, Feb. 10 and 11.

A Happy Retort.

The Concord Monitor gives under the above heading the following version of an incident which created much merriment at the time.

"At the recent union meeting of the Vermont and New Hampshire boards of agriculture, at North Stratford, Col Weare, of Seabrook, who is a great wag, insisted that it was unnatural to milk cows on the right side, and made a facetious talk on the subject, to the great delight of the large audience. At the close of the session when the members were about to separate, genial and complimentary words were given by gentlemen of both boards. Mr Hubbard, of Vermont, referred to the quondam controversy between the two states, and old President Weare, quoting the couplet:

"When in the East crafty Meshech marshaled his band
To hang up our leaders and to eat out our land,"

and added, "then, like his descendant of the present day, he found himself on the wrong side of the cow." This was received with a burst of applause, which every one supposed would silence the jovial colonel. But not so; for as soon as quiet was restored and our New Hampshire farmer could rally his thoughts he perpetrated the following "ancient rhyme:"

When the Vermont boys
Were only mere toys,
In the ancient time,
They came east of Lyme
For a good dinner.
Before Meshech's clan
Away they all ran
West of the river.
Since then they are on the right side of the cow,
And Weare is now even, Vermonters allow.

It is currently reported on the banks of the Connecticut that the reverberations of the shouts that followed may still be heard throughout the upper Coös."

We have only to add that it takes considerable of a spell to "restore quiet" in upper Coös.

This happy retort, although made "as soon as quiet was restored," at the cost of a sleepless night at the Lancaster House for our genial and witty friend, Col Weare, illustrates the advantage the New Hampshire board of agriculture possesses in being able to manufacture its own rhyme.

We regret that Col Weare is not able to be out in attendance upon the meetings of the board this week, but rejoice to hear that he is as well as could be expected.

The half line addition by the secretary, only delayed his report for the press one day. He is a very efficient secretary, but had better let the colonel make the poet ry.

For the VERMONT FARMER.

Cows for the Dairy.

EDITOR VERMONT FARMER:—In your remarks on my reply to Mr Thorp in this week's FARMER you make me say what I did not intend to be understood as saying, and any one reading Mr Thorp's article and mine will see that the last part of my article was in reply to Mr Thorp's idea that dairymen must keep large cows because they were worth so much more for beef, &c. I have so often heard the same remark I thought I would reply to it, as I do not believe in that idea at all, and by reading the editor's remarks further I find we do not disagree at all in our views about cows, only I was not explicit enough in writing, so was misunderstood when speaking of very large cows versus lesser ones.

I did not refer to Jerseys at all in that part of my article. If I had I should have made the average amount of butter per cow one hundred pounds more than I did in the "supposed" case. See address of O. M. Tickham, Esq. on "Jersey cattle in Vermont" in second volume of Report of Vermont Board of Agriculture, &c.

The "facts" in the premises I believe are, there are plenty of practical dairymen in Vermont who are keeping cows of medium size which produce the supposed amount per cow, and that six of said cows can be kept on the feed that will keep five of the big cows I alluded to. I believe I can be sustained in my premises by dairymen in this county.

I am aware that a good butter cow requires a good deal of food, but the very fact of her digestive and secretive organs being such that she will eliminate the greatest amount of butter from her feed shows that when not in milk she will easily fatten, hence it will require less food to sustain her vitality than that of many other cows, and there is where the loss occurs in keeping big cows and poor cows,—it requires so much food to sustain their vitality.

In going amongst dairies of cows and asking the dairymen to point out their best cows, I have found it rare that they point out their largest cows. Old Creamer, the challenge cow of which we have heard so much, is not a large cow. T. BAILEY.

Bridport, Nov 27.

[It may be true that the digestive apparatus capable of eliminating the largest quantity of butter from the food may be turned with similar advantage to eliminating the same elements for sustaining the vitality of the cow when dry, and that less food will be required to sustain the vitality of such a cow than is necessary for a cow which does not assimilate all the available elements in her food. So far we agree with our correspondent. But when he goes on to assume that there is a loss in keeping "big cows" because (as he intimates but does not expressly say) they do not eliminate the nutriment in their food as well as small ones, we must beg to differ. The degree of perfection with which the food is digested and assimilated depends on the size, healthful action and tone of the organs which perform those offices, and *not on the size of the cow*. The rule that all cows require a certain percentage of their live weight to sustain the vigor and action of their vital and digestive organs is one we are not at present prepared to accept. If our correspondents can furnish facts to sustain their respective positions the readers of the FARMER will be glad of them.]

For the VERMONT FARMER.

Relative Value of Corn Meal and Hay.

In the FARMER of December 3, I notice the following question by S.: "Would ten bushels of corn equal one ton of hay?" to which we would reply, Prof Atwater, in his table of digestible organic substances, gives 100 lbs of average meadow hay to contain 47 2-5 lbs of digestible organic substances; 100 lbs corn meal 71 lbs digestible organic substances. Consequently one ton of hay contains 948 lbs of digestible organic substances, equal to 1,300 lbs of corn meal.

By the above figures we shall find that ten bushels of corn (500 lbs meal) would be equal to about 800 lbs hay, and we think would save that amount if fed with chaffed hay. L. W. PITKIN.

Marshfield, Dec 15.

[Does not our correspondent go too far in assuming that the relative value of corn meal compared to hay is as the weight of the digestible organic substances in corn compared to the same in an equal weight of hay? The digestible organic substances in these two articles of food differ in their elements. For instance, corn meal contains five times as much of fats as medium quality of meadow hay.

We incline to the opinion that farmers who are in the habit of feeding corn, or corn meal, to stock will not accept the statement that ten bushels of corn is only worth as much as 800 lbs of meadow hay. Our experience as a feeder of stock will not sustain that notion. The percentage of digestible substances in different samples of meadow hay is exceedingly variable, while those of corn are certain and reliable.

June grass, grown in the most favorable weather, upon light, warm land, where the crop is light, and cut and cured at the most favorable time and in the best manner, with no exposure to rain or dew, and no more than absolutely necessary to the sun, might approximate to the above relative value compared with corn, but that is a different article of food from average quality meadow hay as the words are understood in Vermont.]

For the VERMONT FARMER.

Feeding Jersey Calves.

As there has been much about Jersey cows for the dairy, and rather liking the looks and feeling of those I had seen, I thought I would try my hand in raising some half-blood Jersey heifers. I have now five calves, dropped the last of March, that weighed, the 25th of December, 2,034 lbs. I raised them on sour milk and all the hay they would eat. I am giving them now one pint of oats per day, and they are making rapid growth—the pets of the family. Is there any danger of crowding them too fast? G. A. COBB.

Westford, Dec 16.

[It is the opinion of the best breeders of Jerseys and Ayrshires for milk, that is, those breeders who make it a point to develop the only qualities of value in those breeds, without regard to making show cattle from the Shorthorn standard, that it is unwise to push the growth of the heifers, the dairy qualities being thereby injured.

It is regarded as best to keep them in a healthy condition of thrift only, and not allow them to take on the fat which makes them so smooth and comely to the eye. There is a prevailing disposition among breeders of thoroughbred cattle to keep their stock in high condition for the purpose of show. Many simple-minded buyers are taken in by the condition which conceals defects at the same time that it impairs the action of the lacteal and reproductive functions. When farmers who have their living to make from their dairy imitate this system of treating cattle they make as great a mistake as when they go to the other extreme. A pint of oats a day is not heavy feed for a calf eight months old. The quality of the hay fed to them should be considered in deciding the question.]

Meeting of the State Board of Agriculture, Manufactures and Mining,

At Canaan, Tuesday and Wednesday, Dec 7 and 8, 1875.

According to a previous notice given in some of the state papers, the New Hampshire and Vermont boards of agriculture held a joint meeting at this place.

Mr Fassett of the Vermont board called the meeting to order. Said it was one of peculiar interest on account of its being a joint one of the two boards; that there was a fitness in an exchange of courtesies between the two states, as they were neighbors, whose interests in many respects were one. That it was customary for the town wherever the board met to furnish a chairman to preside over their deliberations, and in accordance with that practice asked for the nomination of a gentleman for that purpose. Geo W. Hartshorn took the chair and after a short, tidy speech announced the meeting organized and ready for work.

Training Animals.

"Training Animals," was the first subject taken up. Mr C. Horace Hubbard, to whom the topic was assigned, said he had not given it special study, but had only given it such attention as every farmer ought to give it. We do not give this matter sufficient attention. Wild animals can be tamed and trained. The smallest birds can also be trained so as to draw tiny carriages.

These domestic animals form an important element in our agriculture. By the proper training of these animals their usefulness will be greatly increased. When trained so as to become useful they increase our profit. Animals should be *trained*, not broken.

We should train our horses, oxen, cows and sheep. There are as few farmers who can train animals well as there are that can succeed in breeding thoroughbred stock. The man who trains animals must first learn to control himself.

Training of animals should begin at a very early age. I went into the pasture where I had a young colt. I caught him by putting my arms around him back of his fore legs, held him up with his feet from me and let him kick until he found he could not kick himself away; when he ceased kicking I put him down. I repeated it until he ceased altogether; he had then taken his first lesson in submission.

It is better not to let them struggle if you can avoid it. A calf of mine was left hitched in such a manner that he injured himself struggling so that it took him a long time to get over it. Learn them to submit easily; after that it only requires patience.

There are two ways to train a colt. One way is to begin when he is young. The other is to let him go until he is three years old and then have a battle with him. If you teach a colt tricks he will very likely be a tricky horse. A man cannot do a worse thing than to teach a colt tricks.

When you harness a colt for the first time put the harness on the floor and walk the colt around it. Let him smell of it; then go very carefully and slowly to work and put it on him. Harness him a few times before you drive him at all, and when you do drive him keep perfect control over him. Some hitch a colt up with an old horse to break him; better break him alone; you get a better trained horse.

In bitting there is great abuse. The mouth is naturally sensitive. Some horses' mouths are spoiled by bitting, and their tempers likewise. I believe bitting to be not only useless but positively cruel.

Let the horse see. I believe blinders are useless and hurtful. It looks odd to see a horse without blinders, but they would look better to us all if it were fashionable.

Hitching is important. It is very bad to have a colt break away. Hitch a young horse so it will be perfectly safe. I don't believe any horse can be safely left without hitching any length of time. I have known several horses to run away after people had perfect confidence in them.

It is important that cows should be well trained; they will not yield all their milk and the greatest profit unless they are perfectly docile. A cow of mine that gave ten quarts at a milking was spoiled so that she was milked three times to get all she gave. Train cows young; learn them that you are their master and friend. It is stated that a cow that is worried retains the cream. She becomes feverish, and nothing is so bad for infants as milk from a feverish cow.

Sheep ought to be trained, although they are so simple. They know something, and can be taught more.

The growth of our animals can be enhanced if they are so trained as to submit easily and without opposition. Those animals thrive best that love to see their master coming.

Discussion.

Col Mead spoke of the importance of first properly training boys. He said many of them are not properly trained in the first place. Boys might become so skillful in training young animals that they could get good pay for doing it. I used to get $3 for training steers when I was a boy fifteen years of age.

There is not much difference between a colt's instinct and your reason. I would no more force a colt to do a thing than I would my boy. A man can't work for me that is unkind to animals. My success in getting jobs of breaking steers was owing somewhat to the reputation I had of being careful of them.

H. F. Holton, member of the New Hampshire board, also said that much depends upon kindness to animals. I have a dull boy at work for me but he is a whistling boy, and a whistling boy will get more milk than other boys. They will also bring in more eggs.

Des S. W. Buffum of the New Hampshire board would most heartily second the remarks of Mr Hubbard. Said by an actual experiment it had been ascertained that fifty pounds less butter per head was made from cows in one season that were driven by dogs than from cows driven by men.

In answer to a question of Col Weare of the New Hampshire board as to the propriety of using a blinder that would admit more light than the present, Mr Hubbard said: I believe they are wholly injurious. Would take them off at once from horses that have habitually worn them.

Mr Fassett of the Vermont board said: During the time I have been keeping dairy I have been inquiring how I might get more from my cows, and have found that kindness to them is one of the ways to increase their profit. A man found a variation in the amount of cream from his cows. He could not tell what was the matter. He had a good dog and not much fence.

Col Mead: Never say "Whoa," unless you mean it. When a horse is going down hill you say, "Whoa! whoa! whoa!" When a tug breaks you say "Whoa!" In one instance you mean "Go steadily." In the other, "Stop." So your horse doesn't know what "whoa" means.

Col Weare said we milk on the wrong side. We suckle the calf on the left side and milk on the right side. The cow will kick from the very novelty of the thing. Your right hand ought to be where the kicking leg is. There is less milk in the forward teats, so your best hand does the least milking. You approach all other animals but the cow on the left side.

Fright will subdue animals. Hunger will do it. Some men's voices will do it, but the best thing of all is love to animals.

Des S. W. Buffum of the New Hampshire board of agriculture then took up the subject,

Neat Stock,

which was the second on the programme. He said: I am exceedingly interested in cattle raising. It is difficult to get men to change their minds with regard to the breed of cattle that they raise. Our native cattle are made up of the different breeds of cattle brought from Europe by our fathers. There are some good cattle among our native herds, but they do not transmit their good qualities with any degree of certainty. The calf of a good milker will not make a good cow. We know nothing of the character of our native stock.

The inquiry arises, What is your object in raising stock? Settle that question, whether for beef, milk or work. If you want to raise red cattle get a Devonshire bull. If you want to raise cows that will give rich milk get an Alderney bull. If extra beef, get the Hereford. If you want all the good qualities get a Shorthorn bull. Get a thoroughbred of a milking strain. Heifers from him will be more sure to make good milkers.

I am in earnest, that no grade bull should be used. He is a curse, for the farmer is being constantly disappointed in his stock. While crossing upon our stock with a thoroughbred bull we shall be getting nearer and nearer to the perfect pattern. The Jew is a thoroughbred; he is always a money-changer.

If you can keep but one cow, keep her well. My cows are giving as much to-day as they did in June. My wife says they are paying a profit on what I give them.

Do not cross a thoroughbred on a grade of another breed. The first cross may do well, but they will ever after deteriorate. If you use a bad bull upon a heifer you injure the heifer for a breeder forever. The first bull used may give character to her calves ever after.

Mr Fassett: In our town we have not succeeded in crossing Shorthorns upon natives for dairy purposes.

Col Mead: I am a Shorthorn man. The glory of the Shorthorn is departing. They were once bred for milk, but they have now long been bred for beef. Therefore I am glad there is a Jersey fever.

Cattle Raising.

C. P. Judd of Canaan then read a paper on cattle raising in which he said among other things of interest: There is no branch of agriculture that does or should so interest farmers as the raising of neat stock. Allowing this to be true, it is of vital importance that a breed or breeds should be selected that will give the greatest return in flesh for a given amount of food. Upon this point I will give my opinion based upon observation and a limited experience.

To cross with the Durhams I would recommend the Devons, for these reasons: They are of a round, plump make-up, red, and have good constitutions, and when the good qualities of both are combined in one, you have the most perfect animal for beef that the farmer can raise.

Four years ago last spring, I raised a pair of steer calves that were high grade Durhams. They sucked half the milk their mothers gave until the September following. They were fed through the winter good hay and a small feed of potatoes or turnips. They have had the same feed in winter ever since, and in summer only what they could get in the pasture. When they were two years old they weighed 1960 pounds. Last fall when three past, 3,200 pounds; they are estimated now to weigh 3,600 pounds. I have received good returns for the food given them. Cattle to pay us must have good feed both summer and winter.

Mr Judd spoke of the importance of kind and gentle treatment, so that when we go into the yard they will gather around us.

In selecting breeding animals, it is of the first importance that they have good constitutions.

Tuesday Evening.

The meeting was called to order and the chairman announced the next topic for consideration to be "Work and Wages," which was presented by Silas Hopkins of East Berkshire, who said in substance, Work and wages are mutually dependent, and out of their relation of dependence there comes a mutual obligation.

The hired man must be prompt, honest, faithful, obedient and it is desirable that he should be intelligent and skillful. The employer ought to treat his help respectfully, kindly and considerately, and must pay his help honestly and immediately when his work is done.

After the reading of Mr Hopkins' paper Col Mead of the Vermont board made an address on "The Opportunities for Young Farmers." It was too long to report in full and too good to lose, and of such a character that an abstract of it would spoil it, and we only say of it further that we hope it will be repeated as often as the board may meet.

A Review of New Hampshire Farming

was presented in a paper of some length by J. O. Adams, secretary of the New Hampshire board.

Mr Adams said: It is appropriate to review not only the past year but the past one hundred years. The nomadic life of the hunter was gradually abandoned, the exhaustive labors of the lumbermen became irksome, and our people devoted their energies, unwillingly at first but faithfully, to subduing the hard but productive soil. He spoke of the introduction of machinery for manufacturing purposes, the building of cities and the new revelations which science has made. New Hampshire has an area of about 6,000,000 acres; 3,600,000 acres are included in farm limits. The value of our farm lands was stated, twenty-five years ago, to be $55,000,000, ten years later $69,000,000 and in 1870, $80,000,000.

The average size of farms in New Hampshire has diminished from 184 acres in 1850 to 149 acres in 1860 and to 139 in 1870, another indication of better culture. The number engaged in agricultural pursuits is reported to be 46,573, and when we consider that 44,000 and more of these agriculturists are native born, their value as citizens is greatly increased.

The early importations of neat cattle into New Hampshire were evidently Devons and Danish. The latter were a large yellow stock brought by Mason and his associates for the purpose of drawing large masts and heavy timber. The former by various parties from the south of England where the Devons, two centuries ago, had become a fixed breed. This stock was not very valuable at first, and was never improved by careful breeding or by proper feeding and housing. It was not until near 1850 that many pure blooded animals were found in the state. To-day New Hampshire has many herds not only of Durhams, Ayrshires and Devons, but Herefords and Alderneys and a few Holsteins, while the common stock known as natives has been greatly improved by grading up through the agency of these pure breeds. The total number of neat animals in the state in 1870, as reported, is 236,000.

Year by year the product of our mowing fields has increased until we are credited with over 600,000 tons annually at a low estimate, worth $6,000. If we add an equal value for the support of our stock in summer, we place to the credit of the state the sum of $12,000,000, produced at less cost than any other crop of equal importance. Of Indian corn, we produce about 2,000,000 bushels annually; of oats, 1,500,000 bushels; of barley, 50,000, and as much of buckwheat; and of peas and beans, twice as much.

The first potatoes were raised in 1722; the culture has increased until in some seasons our state has produced 5,000,000 bushels.

Our milk and butter trade which was not recognized "in the beginning" has increased gradually until our butter product reaches 6,500,000, and our milk sold 3,000,000 gallons annually. Soapstone and granite quarrying, making brick, and gathering ice have come to be an immense business in our state. Mr Adams also spoke of the immense amount of money brought into the state by pleasure seekers, in the summer months.

The first cattle fair ever held in the United States took place in New Hampshire. Our agricultural college is now an established fact. Mr Adams has the rare ability of giving to statistics a rare interest.

The reading of the two papers with Col Mead's address occupied all the time of the evening session so that no discussion followed them.

Wednesday Morning.

Mr Fassett read his paper on

Butter Making.

The main points in the paper were as follows:

Success in butter making depends upon the careful observance of certain natural laws. Pure milk free from taint or unpleasant odor is the basis or starting point. To secure this the cow must be in a healthy condition, must have pure air, pure water, and best of care and gentle treatment. Not only must the milk be pure but must be of a peculiar quality to be the most profitable for the butter dairy.

Some milk is rich in cheese but not in butter. Some milk yields butter of rich color and fine texture. Some cream comes to the surface readily and is quickly and easily churned, and at a higher temperature without injury than some other cream.

All the way from the milking yard to the market neatness, yes, dainty neatness, is required. The milk-room need not be expensive, but should be so arranged that the temperature may be easily controlled. No dairyman with ten cows can afford to use the small pans. The quality of butter in some dairies is greatly improved by substituting large pans for small ones. The improvement is mainly the result of decreasing the creases and crevices, rather than due to a particular form of pan. As regards the vat cooler I recommend them, or the pail system for large dairies where running water can be had at moderate cost, but for the purposes of small dairies it is quite a question whether the large pans without the cooler are not preferable. The pan without a cooler will probably outlast three with. Another advantage in favor of the dry pan, is its moderate cost. Dry air is always preferable for raising cream. Milk must be cooled slowly, and not below sixty degrees, or the animal odor will not escape. I know about this by experience. While the milk is setting for cream every surrounding odor will attach itself to the milk and show itself in concentrated strength in the butter.

Sixty-five is the proper degree of heat for the milk room. If the temperature of the room could be maintained at that degree by admitting dry, cool air at moderate cost, I feel sure it would be preferable to every plan now in use.

Dried cream makes a very inferior quality of butter, and the same condition of things that dries a portion of the cream affects the whole unfavorably.

As to the proper time to skim milk no rule can be given that will apply to the varying circumstances of one dairy, much less to all dairies. Some cream rises quickly, while cream containing very small globules of butter rises very tardily and makes a poor quality of butter. We cannot afford to wait for the poor cream to rise. A little less butter of fine quality will sell for more money than more injured by keeping cream on the milk too long. Thirty-six hours in a temperature of sixty-five degrees is as near the time required as can be given for a general rule. If small, rising spots appear on the cream, it has stood too long and will not make good butter. I can only say watch it and be sure to skim soon enough.

Uniformity in quality is the secret of success in gaining a good reputation. After the cream is taken off the sooner it is churned the better.

As to churns, the first thing to be thought of is, which will make the best butter.

I have selected as my choice the square-box, revolving churn. Any churn involving the same principle is as good. Churning cream at 56 to 58 degrees in warm weather with a variation to sixty-five degrees in the early part of winter has, in my experience, resulted satisfactorily. Buttermilk must all be removed from the butter either by washing or working. If by washing, the water should be at the same temperature as the cream while churning, as the butter will bear, without injury, more working and handling at the before-named temperature than at any other.

The butter must be worked with great care. Avoid the drawing or smashing motion. Salt it to suit the customer. But little of the salt in the market is fit for butter. I use Ashton's.

I soak my tubs in brine by filling them and allowing the brine to remain in them till they are saturated, and do not expose them to the light while soaking or they will become colored. The package when offered for sale should be as clean as when it came from the tub factory.

If you wish to gain a reputation for making gilt-edged or fancy butter you better sell as soon as made; the peculiar freshness so much admired by butter fanciers can scarcely be retained a month in warm weather.

I wish to say in conclusion that it is high time there should be a marked improvement in the quality of butter sent to market, even from Vermont.

In the discussion, some inquiries were raised as to the propriety of mixing milk containing large globules with milk containing small.

Mr Fassett said scientific men supposed there would be a loss in such case, but in one practical experiment I made there was no loss.

Col Weare: Do you think the milk of all Alderneys will have large globules?

Mr Fassett: They will not; that is the result of careful breeding.

Question: Do you prefer grades to thoroughbreds?

Answer: We don't want a good thing if it costs too much.

Col Mead: Do you think it is pretty safe to buy a Jersey bull for a milk breeder?

Mr Fassett: Breeders have bred for color and have lost some of the butter qualities.

Dea Buffum made statements of interest. All the butter made in the town of Conway last year brought an average price of 41 cts. He said with regard to cows our people keep all one kind; they keep all grade Alderneys, or all grade Durhams. Mr Newhall's dairy averaged $154.67 per head in a year. The cows of the whole town averaged $137 per head.

In answer to some inquiries as to the comparative cost of keeping large and small cows that make an equal quantity of butter, Mr Fassett said:

I watch my cows to see which gets the most hay and I find that the Jersey cow that gives a good mess of milk will take in some large wisps of hay.

Col Weare: How do you ventilate?

Mr Fassett: I do not ventilate much. We open the windows at top and bottom for a little while in the evening.

Mr Fassett's paper was followed by a lecture on

Grasses

by J. W. Sanborn of the New Hampshire board. Mr Sanborn said our agriculture is not satisfactory. We should do better. It is to flourish in New Hampshire as it never has before, if I read the signs of the times correctly. How are we to get an increase of productiveness? We must raise the crop that is more adapted to our locality, and the one that can be most profitably consumed at home. And that is the grass crop.

The composition of grass comes nearer to the composition of the soil. The roots of plants have a solvent power on the soil. I believe grass does this better than other crops. Grass roots are finer and more evenly distributed.

We can't afford to buy commercial fertilizers for the grass crop. You may for other crops. It would cost ten dollars to buy plant food enough for a ton of hay. The hay crop is the poorest to sell, but the best to consume on the farm. The Germans have come to the conclusion that a profitable food must contain valuable constituents in certain proportions, and the same proportions that exist in animals. It is found that they exist in hay more nearly as wanted than in other food.

Grass seed is a tiny little seed. The soil must be perfectly prepared, it must be fine and with the manure ready for immediate use by the little fine microscopic grass roots. One of the settled facts is that it won't do to use manure on land that is bound out. The roots have lost their vigor and need to be renewed. I have never succeeded in growing a profitable grass crop on land that is bound out. I would not always break the soil. I have found out that I can apply the seed on the surface and then use the harrow, but I would not do that way on land that can be conveniently plowed. Top dress no land that yields less than one ton to the acre.

There are about 3,000 species of grass. We use two or three. Is it wise to use on our great variety of soils more than two or three of the 3,000. As to the quantity of seed, if the soil is coarse and lumpy you can't use too much. The condition of the soil makes all the difference in the world. On well prepared soil our enthusiasts require too much—more than is needed.

The time to seed: Don't seed after the first of September. The seed will germinate but the plants will not get vigor enough to live through the winter. Seed before the first of September or in November, or very early in the spring. In late fall seeding the seed that does not germinate is ready for an early start in the spring.

The right time to cut grass is just before blossoming. It becomes woody fiber if it stands much later. Science and our animals tell us that this is about the right time to cut grass.

Over-curing damages hay just as over-ripening does. Farmers as a general thing over-cure their hay. What I want to do is this: evaporate the water without losing the natural juices. This is a nice point.

There is no crop so valuable as the clover. It gets a large proportion of its growth from the atmosphere—only about one-tenth from the soil. Its long tap root brings up from the subsoil the waste plant food. The English farmer can get more wheat after clover than before without the application of manure. It is valuable food for young growing animals.

Discussion.

Col Mead: Of course I want to cut my grass early. I want to cure my hay as little as possible. I fill up my bay a section at a time, so that the fermentation will all be at once. This past season I had some very hot bays, so much so that I was afraid of spontaneous combustion. I went out one night and pitched out some hay to prevent combustion. When I fed that hay I found that which was pitched off was injured. The hay that was left was not injured at all. I cut some hay in the morning and drew it in before noon. Shall I put a ventilator in the center of those bays? Will it do well? The answer is, that it will, undoubtedly.

Mr Hubbard said of hay put into the mow with the water dried out that the sap of the grass injures it only where it comes to the air. The top of such a mow will be rotten, and the rest of it will be colored slightly brown. All bright hay is not good hay.

He agreed with Mr Sanborn perfectly with regard to fall seeding, and spoke very highly of the tedder. Said his paid for itself in one day.

Wednesday Afternoon.

Although Mr Pringle's paper on the

Potato Disease

was not all such as uneducated people could understand, yet by the help of diagrams and illustrations it was one of the most interesting of the whole meeting. Mr Pringle said the potato disease caused a famine in Ireland, set a tide of immigration in the direction of our own country, and was likely to convert our New England into a New Ireland.

The potato disease was once thought to be the effect of a microscopic insect, but in the course of time the microscopists found the true cause to be fungus. It consists of slender threads running all through the potato plant.

The organs of reproduction were found and described.

Mr Pringle explained how the disease propagates itself and how it lives through the winter. The disease or plant has three ways of propagating itself. First by simple spores; second by swarm spores; third by resting spores.

To check the disease you have only to destroy the resting spore. That is the question.

The disease may be held in check or in a measure prevented, First, by collecting the tops and subjecting them to boiling heat. Plant no infected potatoes. Plant on no badly infected land. Boil the diseased tubers. Warm, wet weather favors the disease. Too much manure favors it. Fat manures create in the soil just such a condition as warm, muggy weather. Dustings of sulphur will destroy the fungus.

The Relation of Science to Agriculture.

Professor Seely, after speaking of the relation which science held to the arts in the early days of science and philosophy, and of the good it has accomplished for commerce, manufactures and the trades in our own time, said: The connection between science and agriculture has become so plain that it can be no longer neglected.

Geology, "the science that treats of the structure and mineral constitution of the globe," reveals the origin and character of the soil. Knowing the rock from which the soil originated, the observer can arrive at a general conclusion as to the constitution of the soil itself.

Geology has sought out strata from limestone deposits of gypsum, and accumulations of peat and marl, which are laid up in store for our present or future wants. It has gone abroad and discovered valuable fertilizers. Guano in the islands of Peru, nitrate of soda in Chili and phosphate in the islands of the Caribbean sea.

Chemistry, the science which discloses the intimate and invisible constitution of matter, has an acknowledged and direct bearing on the progress of agriculture. Chemistry determines the value of natural and artificial fertilizers. The time when fertilizers can be most profitably employed, and the form in which they should be applied, comes largely under the cognizance of chemistry.

Botany holds a near relation to the farmer's profession.

The rearing and management of farm stock is no mean item in practical husbandry. Zoology, the science that treats of animals, takes these matters under its consideration.

From the time the seed is covered in the soil until it is harvested, it is subject to the ravages of hordes of voracious insects. Of the habits of these insects, of their propagation, their changes, as well as their destruction, entomology treats.

The knowledge of all these will not make a farmer, but these, encouraged and consulted, will add both to his financial and intellectual capital.

A resolution was passed by the meeting thanking the two boards for the meeting, the interesting and instructive papers and discussions, that the meetings were useful, and should be often repeated and well attended.

The meeting then adjourned.

Manures.

Joseph Harris talks sense on the manure question in the Agriculturist:

We must make more manure. Manure is the farmer's capital. Capital is accumulated earnings. If I work for $1,000 a year and spend $1,000, I am no better off at the end of the year than at the beginning. But if I can, by working a little harder, earn $1,200 a year, and by practicing a little economy, live on $800, I can lay up $400. This $400 is capital, and begins at once to earn money for itself. Capital is accumulated earnings. It is what is left of our profits or wages after deducting the expenses of living. Manure is accumulated plant food. It is what is left after raising and disposing of a crop. If your land, as now worked, is capable of paying you 20 bushels of corn and a ton of stalks per acre every year, and you sell the whole, your land is no richer in available plant-food. You are making no manure. You spend all your wages.

The centennial managers have secured fifty acres of land for an international field trial of agricultural implements.